

Saint Paul ATARI Computer Enthusiasts



An independent computer user group

MARCH 1987

SPACE FRIDAY, MARCH 13 at 7:30 PM
MAST FRIDAY, MARCH 20 at 7:30 PM
At the Falcon Heights Community Center
2077 Larpenteur Ave. West

MAST Programmers MONDAY, MARCH 23 at 7:30 PM
At First Minnesota, Lexington and Larpenteur

SPACE and MAST Executive Officers

Bruce Haug	President	774-6226
Jim Schulz	Vice President	537-5442
	MAST Co-Chairman	
	MAST Disk Librarian	
Bob Floyd	MAST Co-Chairman	484-7576
Joe Danko	Secretary	777-9500
Bob Siede	Treasurer	489-3982
Bob Rhode	Newsletter Editor	222-3593
Frank Haug	Disk Librarian	774-6226
Jim Siede	Paper Librarian	489-3982

SPACE/TAIG Bulletin Board 522-2687



Minnesota
Atari ST
SIG

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BYTES from the PRES

What's new for March? How about a letterhead contest! SPACE/MAST is in need of a letterhead that it can use to correspond with other clubs, etc.. So lets have a CONTEST! THE RULES ARE:

1. Must clearly state SPACE/MAST.
2. Should have LOGO.
3. Should include "St. Paul Atari Computer Enthusiasts" and "Minnesota Atari ST SIG of SPACE".
4. No Address, but must have SPACE/MAST BBS Phone #.
5. To be judged by SPACE president & MAST Co-Chairs. Submit to SPACE PRESIDENT. by April 1st, 1987.

Winner to be announced at the April meeting; prize to be determined by number of entries. Minimum prize: \$10.00 in merchandise or \$\$\$CASH\$\$, contest open to paid SPACE/MAST family members only.

The MAST One year Birthday party was great! We gave away over 30 door prizes donated by SPACE/MAST, User Friendly, Wizard's Work, Mindtools, and Alpha-tech. Thanks for a good year!

SPACE is going to have a Birthday Party in July. WE ARE FIVE YEARS OLD !! Watch your newsletter for details.

```
*****
* This Month Joe Danko will DEMO his *
* 1/4 MEG 800 XL, show you what a  *
* "ATARI" can do with more memory  *
* and the right programs!!         *
*****
```

The BBS should have a new 300, 1200, 2400, baud MODEM by meeting time!

The floppies are ordered hope they come by meeting time.
See You March 13th

The Pres.

DOM Stuff
by: Frank

Well first of all, the SPACE - INDEX seemed to do part of its job. We have received word from M.A.C.E. and will be responding soon. So some new FD software is on the way. For new members or those who hibernated this year, the SPACE - INDEX is a database containing all of the Disks Of the Month except for the extra disks. But just because we have some stuff coming doesn't mean you're off the hook. How 'bout some submissions??? And you other groups: write us a letter. We are interested in improving both your FD library and ours.

This month the infamous TURBO BASIC is available as an extra disk for \$4. Boot the back for instructions. See the review I 'volunteered' to write in this newsletter.

Now the March 1987 DOM

L.SPENDO - I know I don't normally put this here and you don't

have to add it to your index, but I added a few features to SFMENU. On the new menu hitting 'H' will show a help screen and hitting the # of a '.DOC' file will show it to the screen; holding start will send it to the printer. Control 1 pauses and restarts the listing and OPTION SELECT aborts.

2. SYNDMAN.DOC - Instr. - Documentation for #3.
 3. SYNTOSDF.BAS - Util. - Converts SYNFILE Format to DBMAN for the ST. (See article by Bob Floyd)
 4. PHONAMER.BAS - Enter. - Shows all possible words for a number for easier remembering.
 5. FEDFRMB6.SC - Util - Fedral tax form for 1986
 6. MINFRMB6.SC - Util - Mn state tax form for 1986
 7. W4FORMB7.SC - Util - W4 form for 1987
- See you at the meeting.

SPACE ATARI USER GROUP
MONTHLY MEETING FOR FEBRUARY
Recorded by Joe Danko, Secetary

I. Meeting called to order on February 13th at 7:30 PM by President Bruce Haug. Approximately 60 members present.

II. Vice-president's report and ATARI news.

A. 8-bit news:

65XE game machine: has a detachable keyboard and a laser gun, available in the spring.

ATARI has a SIG on the GENIE timesharing service. News on there states that the ATARI 1200 baud modem will be available REAL SOON NOW.

The 80 column adapter is also promised REAL SOON NOW as is the 3.5 inch disk drive and upgraded DOS.

A new cassette device has been selling well in europe with software that runs at 3600 baud.

8-bit sales are very hot behind the Iron-Curtain but U.S. regulations will not allow the sale of 16-bit technology.

Many new software products are available. STAR FLEET ONE from EA. BASIC ENHANCEMENTS II from FIRST-BYTE. MIND TUNER. VIDEO TITLE SHOP. WAR GAME CONSTRUCTION SET. NEWS STATION, desktop publishing. MAIL ORDER MONSTERS from EA. VIDEO VEGAS. WARSHIP from SSI.

B. ATARI CX85 KEYPADS are available via mail order for \$7.95 each or 3 for \$20 plus \$3 each shipping.

B. G. MICRO
P.O.Box 280298
Dallas, Texas 75228
(214) 271-5546

III. Treasurer's Report

Present balance is \$1153.

IV. Secretary's report

See the current newsletter. Thanks to Larry van dan Platz for doing the minutes for January while Joe Danko was away learning about

Burroughs systems.

V. Disk-of-the-month

Frank Haug gave the usual descriptions and demonstrations. The most current ANALOG DOM had not been recieved in time for the meeting.

VI. Newsletter Editor

This month's issue was late from the printer and copies were made available at the meeting. Due to the lateness, the printer gave us a rebate.

Bob Rhode will be resigning. A new editor will be needed very soon. What is really needed may be two editors, one for 8-bit and one for ST. Approximate time required is two evenings or so a month. Volunteers should contact Bruce Haug.

VII. Paper Library

Trying to aquire a rubber stamp to mark all of the library contents as property of SPACE.

VIII. TAIG/SPACE BBS

TAIG has made a proposal laying out new ground rules for ownership/operation of the BBS system. They want all participating groups (SPACE) to share in the hardware and operating costs if they are to share in the operation.

This gives SPACE several options:

1. Drop all SPACE support of the BBS.
 2. Continue to pat our share of the phone expenses, lease our share of the hardware and share in the operation via a joint committee.
 3. Purchase some new hardware for the BBS, share in the operation expenses and share in the operation via a joint committee.
- Presently the BBS is running on Tom Green's modem and hard disk due to the following hardware problems:
1. The Signalman modem owned by the BBS appears to be defective or not compatible with the BBS software in that it does not properly initialize automatically.
 2. All three of the BBS disk drives (2-810, 1-1050) have malfunctioned and repair is doubtful.

By a showing of hands, the BBS is used by about 6 SPACE members at the present time and about 25 have modems but do not use the BBS.

It is generally believed that SPACE members could be better served on the BBS if SPACE had a hand in its operation.

There followed a discussion on the BBS, Taig's proposal and possible options. There appears to be a need for a demonstration or tutorial for many inexperienced modem users who want to use the BBS and do other things via a modem but are having trouble getting started.

Several motions and amendments were made from the floor and by agreement were formed into the following motion:

SPACE will support the TAIG/SPACE BBS and join in ownership and operation of the BBS with TAIG. Two SPACE members will initially be made members of the proposed joint committee for operation of the BBS

with TAIG. All expenditures will be approved beforehand by a vote of SPACE membership. Approval of this motion will give the two BBS committee members authority to negotiate with TAIG and purchase a 2400 baud modem for use on the SPACE/TAIG BBS for the nominal cost of \$300. SPACE will retain ownership of any and all hardware purchased.

The motion was approved by a voice vote and two members volunteered for the joint-BBS committee and work on the modem purchase:

Joe Danko 777-9500
Charles Viebuls 341-2163

IX. Ribbon Re-inker

Larry Vanden Plas, the operator, noted that he was running out of ink and was authorized to buy supplies as needed from Wizard's Work.

Most ribbons can be re-inked for \$1, large ribbons for \$2.

X. Offers and Deals

Wizard's work is taking orders for the unreleased 300/1200 baud ATARI modem.

ATARI MSDOS PC is strictly a rumour at this point.

Colored ribbons are available at B. Dalton computer center stores.

Discussion of 80 column displays and availability of an 80 column upgrade from CDY in Texas.

Another group blank diskette purchase is in motion with the approximate cost of 30 cents each in lots of 1000. A sign-up sheet was put out for members at the meeting.

XI. Service problems/Information

Newer ATARI hardware is more difficult to fix because sockets are no longer used and the chips are soldered into the PC assemblies. Be prepared to pay for unit or pca replacement.

Some of the ATARI 9 volt AC power supplies have a fuse inside and can be easily repaired by removing the rubber feet and removing the screws underneath. Bruce Haug converted a RADIO SHACK DC supply to AC by removing the rectifier diodes.

XII. Correspondance with other ATARI clubs.

A. We heard a talk by Don Nelson from Tacoma, Washington.

Don is a member of SPACE in the Seattle, Tacoma, Puget Sound area. Don brought us a copy of the new TURBO-BASIC (XL/XE only) from Germany. SPACE in St. Paul and SPACE and Seattle correspond on occasion and trade software.

He told us about how they sell their public domain disks through the various ATARI outlets and dealers and how successful it has been as a source of income.

Don travels quit a bit and carries his ATARI 800XL and INDUS disk drive in a suitcase and uses it to contact his son via a modem while traveling. He also carries a 1027 printer.

B. We are now communicating with a group in Duluth/Superior called FAACE. Forts Area ATARI Enthusiasts.

XIII. Demonstarations and Tutorials

Gordy of Wizard's Work and Joe Danko gave a highlight demonstaration of spreadsheets and SYNCALC.

ANALOG DOM

by: Dyanne Haug

Due to some mix-up the analog DOM wasn't at the last meeting; this month it will be. The club sells the ANALOG disk to subscribers of ANALOG Computing for \$4. Proof of your subscription is required if you have never purchased an ANALOG disk from us or if your subscription has run out. If it has or if you are new, just bring a current magazine with the mailing label intact.

Thank you.

TURBO BASIC

'Reviewed' By: Frank Haug

Turbo basic is an improved basic. The disk we are selling is Turbo basic & Turbo basic compiler. You must have an XL or XE in order to use turbo basic, as I understand. It loads itself into the Operating System and looks like normal basic with extra commands.

What's so great about it? It is fast - and I don't mean when compiled! It has an I/O demo in which 1000 bytes are written/read/deleted from a file. Stanard basic calls of GET #n,c etc. takes 70 seconds to write, 40 secs to read. TB takes 38 secs to write, 19 secs to read. It also has DOS commands: BINARY LOAD, BINARY RUN, DELETE, DIRECTORY, LOCK, UNLOCK, and RENAME.

Graphic commands: CIRCLE, CLS, FILLCOLOR, FILLTO, PAINT (a recursive fill) and TEXT (a graphic text routine).

Memory commands: DPOKE m,v (no more poke 88,0:poke 89,1), MOVE (Block transfer), -MOVE (same as move but starts at end of source block), BPUT, BGET (Block put/get), %PUT, %GET (the faster I/O).

What about structured programming? Commands: REPEAT, UNTIL, WHILE, WEND, ELSE, ENDIF, DO, LOOP, EXIT, PROCEDURE, ENDPROCEDURE, EXECUTE procedure.

General commands: PAUSE, RENUM, DEL, DUMP, TRACE, DSOUND (channel pairing sound), GO TO, Labels, HEX, DEC, MOD, DIV, FRAC, TRUNC, &, !, EXOR (binary AND, OR and EXCLUSIVE OR), DPEEK, TIME, INKEY\$ and more.

What could be wrong with that? Well there are some downers - nothing major. So far the only compiler problems have been with the basic END statement and the lines:

```
10 FOR I=1 TO 100
20 IF A(I)<>1 THEN NEXT I
30 NEXT I
```

It doesn't like two "NEXT I" 's.

The compiler is fast and very efficient, but it doesn't make stand-alone programs. RUNTIME.COM must be used to execute the new program. It's too bad a 'Turbo linker' doesn't exist. This is the only downfall besides the XL/XE requirement. It boots up w/ Ramdisk. One note - the compiler asks you very politely what you want to compile: "Welches programm soll compiliert werden?" I hope to get

the English version in time for the meeting.

Well what did you think of it? Overall, a step in the right direction for basic users who want to stay in basic but need the speed.

V.F. Notes
By Jim Schulz

As I was about to write this, I was ready to blast Atari for their 8 bit support. Atari has been giving us the runaround for the last year, telling us about all the new products for the XE and XL but not producing. The only new 8 bit hardware product to show up is the 300 baud modem. Softwarewise, Star Raiders II came out, and that is about it. A couple other titles are available elsewhere, but I have not seen them here. You get the impression that Atari is an ST company and doesn't really care about us anymore. Is the Atari XE/XL a dead or orphan computer? I sure hope not.

What was said above is felt by me and many other club members, but never said. This week Atari assigned Alex Leavens, Atari's new Technical support manager, to answer questions and provide support for the 8 bit computers. In a top management meeting last week, a major topic was 8 bit support. This sounds like a lot of talk without much meat, but it is a start. Since this news, a goodly amount of 8-bit news has come out.

300/1200 modems: Atari expects production modems in the warehouses by April. Expect to see them in the stores in late April or early May. No word on the 80 column emulator.

At the June CES, Atari plans to officially unveil the 3.5" drive. The drive will have 360K of storage, true random file access, hard disk support, time and date stamping and 'tree' directory structure.

Here is a list of new software. 80-column AtariWriter Plus, an 80-col Silent Butler, Battlezone XE and a new version of Atari Planetarium. Look for more information in June.

The XE game console was shown at the 1987 International Toy Fair. The current package includes three game cartridges, a keyboard for interactive games, a joystick and a pistol for target games, all for \$150. Also introduced was a \$99.00 disk drive for running game software written for the XE/XL computers. Is this a \$99.00 disk drive for 8 bit computers?

RESERVE the DATE of the JULY SPACE MEETING on your CALENDAR. More next month.

Bob Floyd and SPACE/MAST are sponsoring a contest for our April meetings. Look for Bob's article elsewhere in this issue.

Now for some bad news... Two very supportive companies for the Atari XE/XL and ST lines are having problems. Rumor has it that Activision has filed for bankruptcy protection. Also, Batteries Included has been sold to Atari archenemy Electronic Arts. For more news and comments, check out my ST column.

Finally, this month 8 Bit Xtra will look at a reset-proof ramdisk for extended-memory machines. As always, your contributions are always welcome!

That's it for March! I'll look forward to seeing all of you at next SPACE meeting.

8 Bit Xtra

This month's 8 bit Xtra again comes from GENIE and is a hardware modification for a reset proof ramdisk for extended memory machines called, the Freezer. You do these modifications at your own risk. If you find problems with these modifications, write them up and I will get them published next month. Until then, read and enjoy. Jim Schulz

THE FREEZER By Bob Woolley

There is one upgrade that can be applied to an Atari XL/XE which is near and dear to my heart... extra memory (256K). Many programs that are only OK when run from a disk drive, come alive if you execute them from memory. The PaperClip spelling checker is a good example of this. If you have a 256K machine, the dictionary will load completely into memory and will search a list of words instantly. There are also programs whose capacity is increased tremendously by the 256K upgrade. (PaperClip, a word processor, will hold 112,000 characters vs. AtariWriter's 20,000 or so).

Great stuff, but... a few complaints. How do you use a ramdisk with a program or DOS that is not written for them?? Also, when you turn off the power to a 256K memory chip, the data that is stored in it does not disappear in a few hundredths of a second as it did with the older and less efficient 16K and 64K devices. The operating system, which controls the power on and reset sequences, only checks a few bytes of memory to determine if the power was just turned on (the locations would be garbage), or if you had hit the RESET key (the locations would equal specific values). If, after powering off and then on (in order to re-boot your system), those bytes have retained their data, the system may branch through a warm (RESET key) start, instead of taking the proper path through cold (power on) start. This forces you to allow enough time to elapse after power down for those key addresses to lose their data. A repeat of power off/power on isn't going to help unless you wait the required interval (like 10 to 15 seconds...). This waiting around is very annoying - didn't you get this extra ram to save time??

So?? This is nothing new to those of you that have expanded systems. How do we fix it??

Relief arrives as a small hardware modification that allows you to force a cold start and boot the system with the RESET key (which will normally produce a warm start and no boot). With this circuit installed, you can re-boot your computer without turning off the power and losing the data in the extended memory banks. This means that you can install a ramdisk, load it with data and then re-boot the system from the ramdisk. Using a menu created for this purpose, programs that do not support a ramdisk, even a game, can be run - if you can force a coldstart without turning off the power (anyone want to write the menu for this??). Also, you could be operating with a ramdisk, boot a different program, run for a while, and then re-boot the original program with the ramdisk memory intact. And, of course, you don't have to wait for the memory to blank out after you power off. (a warm start is cooled down to a cold start any time you wish... hence, the FREEZER.)

This is accomplished by making the computer think that you have

changed the status of the cartridge, either removed one that you were using, or plugged one in where you had not had one before. During reset, the operating system checks the cartridge status since the last power on. If it sees that the status has changed, it executes a cold start and re-boots the computer. This upgrade allows you to change that status when you press the FREEZER switch (the one you will add). This means that if you hold the FREEZER switch down, push RESET (and OPTION, if you don't want BASIC), and wait until the screen goes black(off), you will get a cold start. If you hold the FREEZER switch down too long and the screen restarts before you release it, you can just push RESET alone to cold start. Accidentally hitting the FREEZER switch while you are running will lock your computer, but as long as it is not active when you RESET, it will not FORCE a cold start. You may get one anyway if your program is designed to produce one, so mount the switch in a protected spot. A little practice will get you a cold start every time.

Installation requires some soldering and cutting, so don't try this if you haven't had experience. You will need a 74HC86 IC, a small push button switch and a 1/4 watt resistor between 1K and 30K. Take your 1200XL, 800XL or 130XE apart and locate the GTIA chip. (1200XL=U19; 800XL=U17; 130XE=U17) You need to isolate pin 11 of the GTIA from the rest of the circuit by cutting the wiring on the printed circuit board. The 130XE requires two cuts and an added wire since the pin is between two points that you would like to keep connected. The normal circuit is: pin 14 (RD5) of cartridge - pin 8 of MMU - resistor to ground - pin 11 of GTIA. In that example, you could cut the wiring to pin 11 and not remove any of the connection points from the circuit except pin 11. In the 130XE, pin 11 is between the cartridge and the MMU, so you have to restore the wiring from cart. to MMU after cutting out the pin.

1200XL: cut the trace on top of the board just to the left of Q4. MMU is U14.

800XL: cut the trace just below pin 11 on the GTIA chip (U17). MMU is U3

130XE: cut the trace on top of the board just below pin 11 of the GTIA chip (U17). Also cut the trace on the bottom of the board right next to pin 20 of U17. Add a wire from the pad near the last cut you made (near pin 20 of the GTIA chip) to pin 8 of the MMU chip (U3). This added wire restores the circuit between the cartridge and the MMU.

All machines: the added circuit is 1/4 of a 74HC86, which is an exclusive-or circuit. Wire pins 4,5,7,9,10,12, and 13 to ground. Connect pin 14 to +5v. Pin 1 goes to pin 8 of the MMU and pin 3 to pin 11 of GTIA. Connect a 1/4 watt resistor (1K-30K) from pin 2 to ground. Finally, mount the push button (normally open) switch on a clear area of your case and wire one side to +5v and the other to pin 2 of the '86. That is all that's needed. If you want to restore your machine to normal, solder a wire between pin 11 of GTIA and pin 8 of the MMU and remove the added IC and switch.

Well, it looks like it will take you longer to read this whole thing than it will take to build it. Just take your time and ASK FOR HELP if you aren't sure!!

<Uh,oh... do I have to open up my computer again??> Yep!! May be a good idea to install MORRAN and FREEZER at the same time and on the same board. Takes two ICs - maybe you should leave a little extra space...

What's Your Most Outrageous Rumor? by Bob Floyd

Have you ever listened to Jim Schulz give the news and rumors at the SPACE or MAST meetings and wondered how many of these amazing things would actually come true? Jim does a good job with the news, but he can only work with the reports he gets; some of these are outrageous. Have you ever wished you could make up some of these rumors yourself? I know I found myself thinking that thought during the last MAST meeting.

In honor of April Fools day, SPACE and MAST will have a "Most Outrageous Rumor" contest. The board has authorized prizes, 1 for SPACE and 1 for MAST. Prizes will be worth about \$10.00 each (probably Flip'n Files, etc), so it's worth a few minutes of your time to think of a good entry.

Here's the rules and suggestions:

1) Rumors must be given to Bob Floyd at the March SPACE or MAST meeting or mailed to Bob at his home (must arrive by March 25):

955 Connor Avenue East
Maplewood, MN 55109

Include your name, phone number and which group you are in (SPACE, MAST or both). Rumors do not need to be specific toward 8 or 16 bit machines.

2) Multiple entries are permitted.

3) Rumors should be 1 or 2 sentences in length but longer ones are fine, too.

4) Rumors will be printed in the April newsletter. Winners will be announced at the April meetings.

5) Rumors will be judged on outrageousness, believability and originality, in that order. In other words, "ATARI purchased IBM for \$2 million would probably not win a prize.

6) The board will select the 2 winners.

MAST Meeting Notes for February, 1987 by Dan St. jobs

The first anniversary MAST meeting was opened by Co-chairman Bob Floyd. Attendance was very good. Jim Schulz reported on this month's DOMs. Bob Siede gave the treasurer's report for January - income was \$822 and expenses were \$997. Bob Floyd made an announcement about the newsletter. Uploads for the newsletter can be made either to LR Data's BBS (777-6376) or to Mindtools BBS (542-8980). Paper librarian Neal Palisary stressed the need for people to bring back any books that they have borrowed. It is important to let other people have a chance at them!

Jim talked about the GFA Basic package that is now available. The low-priced IBM clone from ATARI is rumored to have been abandoned, but an AT clone will be announced in March. There are also rumors of an Enhanced ST in March, sporting the Motorola 68020 microprocessor. ATARI and Supra Corporation have agreed on hard disk drive software and ATARI will incorporate features of Supra software in new releases. "Tackle Box ST" is coming out soon; this is 500 pages of documentation for OSS Pascal Gem calls.

Bob Floyd is organizing a contest for the most outrageous ATARI rumor in honor of April Fool's Day. He will discuss this at the March meeting.

At this point, every one descended on the goodies: cake, chips, popcorn, pop, coffee, etc. After some munching and some talking, door prizes were drawn. Each member received one ticket, plus one additional ticket for each disk purchased at the meeting.

The winners were (please pardon any misspellings!): John Rainey, Dick Stubbs, Bob Kronschnabel, Fitzgibbon, Phil Seifert, Kiley, Bill LeDuc, Paul Martz, Dan Stubbs, Urmann, Todd Burkey, Brian Reynolds, Allen Frink, Frank Brigleb, Chris Bender, Bob Payne, Rick Sannor, Steve Pauley, Bob Korn, Rick Cameron, Mat Goldman, Bill Eckert, Steve Murphy, Bruce Nelson and John Stanley.

Grand Prizes were given to Bruce Nelson (the game '10th Frame') and Bob Kronschnabel (Degas Elite).

A special thanks to the ATARI vendors for the donating prizes: Alphatech, Mindtools, User Friendly, and Wizard's Work.

After the drawings Todd Burkey demonstrated 'Balance of Power' and Phil Seifert demonstrated Midi Music software.

The second programmers' group meeting was held the Monday following the MAST meeting at 7:30 in the First Minnesota Building at Lexington and Carpenter. Sixteen people were present.

Jim Schulz opened with some news about software releases and updates - Mark Williams C is now shipping Version 2. A new version of Modula 2 is coming out, as well as a new version of Micro C-Shell. GDOS was reported to be available from ATARI to developers who asked for it; they will be charged a one time fee of \$500 for use of GDOS in any program they sell.

After questions and answers, several excellent demonstrations and tutorials were presented. Bill LeDuc demonstrated an application shell he has developed in Megamax C. Steve Pauley demonstrated his maze generation program. Todd Burkey showed a scroll utility in Mark William's C and Dave Meile demonstrated Kuma's resource editor and K-Switch. Thank you all.

News from the Co-Chair By Jim Schulz

I want to thank all of you for making MAST's first year a rousing success. The birthday party went off without a hitch. I would like to thank the three local Atari dealers who donated door prizes to our raffle, User Friendly, Mindtools and Wizard's Work. Without their help, MAST wouldn't be around today. I would like to thank the members who brought chips and the snacks. I would like to thank Bruce and Diane Haug for getting the cake, pop, and raffle tickets. Next, what would MAST be without Bob Floyd? Finally, I would like to thank you, the member of MAST, for coming and showing your support. From the eating and the comments, I think a good time was had by all. If you missed it, mark your calendar for for the second annual MAST birthday party next February.

I am in the process of preparing a survey to determine where we go from here. I base my articles and news on your opinions. If you have something to say, please say it. The survey will ask about Bob and me, how we are doing, and the DOM. The survey will also ask some ST hardware questions. But no names are required! Bring your pens and pencils and get ready to write! If you fill out the survey, you will be entered in a raffle for a small thank-you prize.

We will have demos of GFA Basic, K-Switch, Techmate Chess, PrintMaster Plus, Crystal Castles. Also, if anyone has a copy of MS-EM, the MS-DOS emulator, I would love to see a demo at the meeting.

Last month's programmers' meeting was very informative. I would like to thank Bill LeDuc for his talk about object programming. Also thanks to Todd Burkey, Steve Pauley and Dave Meile for their contributions. If you have written a program you would like to demo, a programming tool to be demoed or a topic you would like to discuss, let me know so I can inform the troops.

The new ST ToolBox program for OSS Pascal should be available by meeting time. A demo is hoped. The programmers' group meets the Monday following the MAST meeting at the First Minnesota building at Lexington and Carpenter at 7:30pm, upstairs.

On April 24 at 7:30 pm MAST is sponsoring a MIDI demo at Wizards Work. Phil will cover the ST and Midi in detail and answer your questions. Wizards Work will not be open for sales at this time. They have volunteered the space for this Midi meeting. No DOMS will be sold, but memberships if people are interested. I would also like to thank Phil for his Midi demo last month. If you would like other topics discussed in this format, let us know.

Finally, some leadership changes in MAST are in the offing. It's been a year and it's time for us to move on. If you are interested in helping MAST, give Bruce Haug a call and let him know. We can always use your help.

Atari News and Rumors by Jim Schulz

In the last two weeks, two Atari supportive software companies have run into problems.

Rumor is that Activision has filed for bankruptcy protection. If true, it could mean the end of Infocom, the premier text adventure company. Activision itself grew too fast and spent more time buying other software companies than developing good software. What I would mourn for is Infocom. The quality and uniqueness Infocom text adventures is unsurpassed. All of their programs are a class acts.

Batteries Included has been purchased by Atari's archenemy, Electronic Arts. Electronic Arts is about to go public and its investors said it would be more attractive if it had business software. They did not want to come across as a game company, so they bought BI. Rumors say EA immediately laid off half of BI's Canadian staff. Electronic Arts is known for copy protection, so you can expect all of BI's products to be protected in the near future. Also, EA is not a big supporter of Atari. Their computer is the Amiga; they believe all 8 bit owners run programs off cassette.

The Hannover Computer Show and Exposition started this week in Germany.

First, no new hardware was shown. Atari flew in the new Mega ST case and motherboard to show off. They hope to go into production by the end of March, and the first computers should show up about a month later. Atari also showed their laser printer with their name plate on it. These are to go on sale within two months.

More goodies: STs were driving robots and oscilloscopes. Atari software shown included Crystal Castles, available now, and some educational software. A new multi-tasking system allows 3 tasks to

run at the same time - and is fast.

You saw the Atari 8 bit emulator on last month's DOM. Atari says, "Forget it! We don't want it released." Atari says that the operating system and Basic are copyrighted, and they will sue! Nice attitude Atari has. Atari has contacted XANTH, the 'Boink' people, and told them the emulator encouraged piracy. But Atari says if it does work, they want to sell it. The emulator, by the way, is now further than it was before. It supports all graphics modes, DOS and display lists. All that's left are player/missile graphics and sound.

Atari now plans a software and hardware IBM PC emulator. The new 1040 STs will only read 80 tracks on a disk, so extended formats and some protected software will not run.

It has been reported that the Atari PC will not show up in August; it never really existed. The Atari PC shown at CES was totally fake.

Atari has announced that all new software products, including games, will support both color and monochrome. The first of these products is Crystal Castles, which is available now.

The latest word on the blitter chip is that it is finally done. Now Atari can't manufacture the chips fast enough. Rumor has it that QSS Pascal programs and a number of current products are incompatible with the blitter chip.

Atari has no plans to drop the 1040 ST, but you can expect the 520 ST soon to include a built-in single sided drive. The rumored Octobussy, multiple DMA port device, does exist but is not near production. Microsoft Write is still debugging. Atari says they will not release it until it works perfectly. Finally, Atari has decided not to sell First Word Plus, the First Word upgrade. If they have Microsoft Write, they don't need any other wordprocessors.

Fleet Street Publisher should be out by the time that you read this. This program should give Publishing Partner a run for its money. ST-Talk Professional will not be done 'til the beginning of April. If it delivers as advertised, I will be the first person in line waiting for one. The next version of GFA Basic will be available in three to four months and include 100 new statements and a compiler that builds desk accessories. Also expect a book by the author of GFA in two months.

New Michtron software includes Techmate Chess, Super Conductor - a Midi music program - and Perfect Match, Michtron's first educational program for the ST. Space Shuttle II should be available by meeting time.

Updates! Here is this month's list:

First up, Mark Williams C, Version 2.0 should be available for \$55.00 plus the Page 2 of the manual (with the copyright notice). Included in this update is a new manual with 200 pages of new material on AES, VDI and Line A calls. Also included is a faster compiler and support for MT C-Shell. For the update, send the above to:
Mark Williams Company
1430 Wrightwood Avenue
Chicago, IL 60614.

Magic SAC Plus will be available, along with version 4.0 of the Magic software. This new version of the cartridge now works with the newer Finder. The 4.0 software will only run with the new cartridge. For an update, send \$25.00 and your Magic SAC cartridge to Data Pacific. I don't have an address.

Finally, if you own Publishing Partner send in your warranty card. Version, 1.01, is available free to all registered owners. Happy upgrading.

Well, it's that time again... The envelope please...

First is K-Switch. This program allows you to switch between two programs. It doesn't work on all programs, but it does have some interesting uses.

Next is Super Directory from Michtron. This is very nicely done and a good addition to your software library.

Finally, I could say Phantasie II, but it is not much different from Phantasie I. But it has kept me busy for the last two weeks.

That's it for this month. I'll see you all at the March meeting of MAST and the MAST Programmers' Group. Until then, happy computing.

[Everybody needs an acronym. How about MPG for MAST Programmers' Group? -ed]

MAKING THE SWITCH - FROM SYNFILE+ TO DBMAN - PART 2 by Bob Floyd

Why would you convert your SynFile+ datafiles to DBMan, anyway? After all, SynFile+ is an excellent database. Let's assume for a minute that you have both an XE and an ST, eliminating equipment considerations.

- 1) Report writing capabilities
- 2) Command language to handle complicated and/or repetitious procedures and calculations
- 3) "Standard" file storage format for easier transfer of information to and from DBMan
- 4) Relational capabilities

The first 2 are my reasons for switching to DBMan. Reason 3 doesn't matter to me, but may matter to persons dealing with other business software. Reason 4 is a mystery to me; I don't really understand what "relational" means or why I should want it.

The report writing and command language capabilities of DBMan are essentially unlimited. You can do nearly anything if you can handle simple programming. The command language is similar to Pascal, but without need for "deep thinking." However, if you are accustomed to easy list-generating in SynFile+, you may be unhappy with DBMan.

The report writing capabilities of DBMan have recently been enhanced by files on the program disk that allow you to fill in the blanks for several types of forms. There is also a GEM tie-in on the latest revision that is helpful to new users but not worth the bother once you've mastered the command language.

OK, let's get on with the discussion where we left off last time - ASCII file transfer from 8-bit to ST and reading the file with DBMan. First, connect the null-modem cable (that you borrowed from the club) to port 1 of your 850 interface and to the serial port on the ST. No modem is used. (If you don't have an 850, you will have to upload your files with a modem from your 8-bit to a local BBS and download them again with the ST. Be sure to get the sysop's permission first.)

Then boot up both computers with terminal software. I used Hometerm on the 8-bit and ST-Talk on the ST. Set both computers for

half-duplex and try type 1200 baud to see if you are receiving on the other computer. If there is a problem, check to see that the baud rate, data bits, stop bits and parity are the same. The default settings on both computers will probably work. You can use any baud rate acceptable to both terminal programs, so choose the fastest one common to both.

Now set your ST for "capture" (or "receive an ASCII file") with the same filename as your 8-bit file. Using the example from the first article, this would be: A:ADDRESS.SDF !Be sure to have a blank, formatted disk in drive "A" before setting up for capture!

On the 8-bit, put your data disk in the drive and choose "send a file" to make an ASCII send of your structured data file. You may then have to press the "start" button to actually start sending. You will see the file on the ST's screen as it comes across. You might not see it on the 8-bit screen.

When done receiving, end the capture on the ST by using whatever command is appropriate for the software.

As stated in the first article, ASCII send and receive automatically translates from ATASCII on the 8-bit and ASCII on the ST. An XMODEM transfer will fail to translate characters correctly and you will get garbage.

Now turn off your 8-bit machine, return to the GEM desktop on the ST and boot up DBMan. Put your data disk in drive A. Using the filename example from above, issue this command: CREATE A:ADDRESS This creates the file ADDRESS.DBF. You can then use the printout from the 8-bit program SYNTOSDF.BAS to help you correctly set up your DBMan fields. Be sure to set up all the fields, in the correct order (same order as on the SYNTOSDF.BAS printout) and length. After setting the structure, issue this command: APPEND ADDRESS SDF FROM ADDRESS.SDF

Now you have made a DBMan datafile from your SynFile+ database. It sure beats typing!

If you want to change the field lengths or add or remove fields, use the MODIFY STRUCTURE command (assuming you have already said USE ADDRESS). That's it!

Be sure to let me know if you're interested in another installment. If I write more, it will be on programming in DBMan command language, or maybe null-modem cables. Bye.

LINE DRAWING - AMIGA vs ST 01/87 - by RALPH RUSSELL

I have been developing a 3D graphics game for the ST during the past year. At the time I started this project, I had to choose which machine to write it for (ST or AMIGA). For various reasons, I decided to do it on the ST. Ever since I started, I have been wondering if the AMIGA might have been a better choice because of its blitter chip.

About a month ago, I acquired an AMIGA for the purpose of developing my game on it (now I get to do it on both machines). All of my code is written in assembly language because I want to attain the fastest possible speed of execution. For this reason, I must become very familiar with all hardware that I am using. I have not yet had time to do much with the AMIGA, but I have studied the problem of high speed line drawing.

To draw lines quickly on the ST, I have developed some highly

optimized assembly language code. This code can draw lines very quickly but takes up an enormous amount of memory (that's OK for my application because the ST has an enormous amount of memory). Most of this large amount of memory is used for a division lookup table used to calculate the slope of the lines to be drawn. In one particular version of my line drawing code, this table takes up 128K bytes of memory.

On the AMIGA, I simply got my code over there and modified it a little bit and I was drawing lines. Of course, using this method, the AMIGA draws the lines somewhat slower (because of its slower clock speed). Next I started reading the AMIGA hardware manual to figure out how to use its special hardware to draw lines. The blitter chip on the AMIGA has a special line drawing mode. All you have to do is plug some values into the blitter chip's registers and it will draw the lines with hardware. After a long struggle with the manual, I finally figured out how to do it. The section in the manual on hardware line drawing is very skimpy and I found a lot of the information to be totally inaccurate. Much to my dismay, I have determined that the AMIGA hardware draws lines much slower than my highly optimized assembly language code. I have not yet quantified this, but my test program ran noticeably slower when I was using hardware line drawing.

I should point out a few things. The code necessary to implement hardware line drawing on the AMIGA only takes a small fraction of the memory needed by my high speed code. The other functions of the AMIGA blitter chip are quite a bit faster than anything I can do with software. The AMIGA that I am using has 512K (all chip memory). If I was using "fast" memory above 512K, hardware line drawing may be faster if I can get the 68000 to do something else at the same time.

Although I won't know which machine is faster overall until I finish my project, my gut feeling is that a 512K AMIGA is not going to be any faster than an ST.

Disk of the Month - March

By Jim Schulz

Last month I had 4 old disks updates and 12 new disks:

- #55 - MicroEmacs with Help (New Version of Emacs with docs and source)
- #78 - Uniterm 1.6B (New version of Uniterm now with Kermit support)
- #88 - Demo Disk #15 (ST Term communications program)
- #101 - 8 Bit Emulators (Color and Monochrome Apple and Atari Emulators)
- #103 - February DDM #1 (Utilities)
- #104 - February DDM #2 (Applications)
- #105 - February DDM #3 (Games)
- #106 - February DDM #4 (GFA and Pascal Files and Programs)
- #107 - February DDM #5 (C Files, Communication Programs, and General ST)
- #108 - February DDM #6 (Demos and Modula Files and Programs)
- #109 - Demo Disk #20 (Happy Birthday CAD-3D Demo)
- #110 - Larn Game (Larn Dungeon Game)
- #111 - Larn Game Source Code (C Source Code for Larn)
- #112 - PrintMaster Icons #1 (Public)
- #113 - Animated Dolls Demo (Music Box Dolls Demo)
- #114 - CP/M Utilities Disk #2 (Space Invaders, Modem Program and

More)

I heard two complaints about the DOMs at the last meeting. First, the upgrades cost too much. So from now on, upgrades will be \$2.00 plus your original disk or \$6.00 for a new disk. If MAST starts losing money I will have to return to the old scheme. Second, disk documentation is messy. In April I will re-doc all of the disks using Michtron's Super Directory program and place the listings in two three-ring binders. Anyone out there have two matching three-ring binders?

As you can see, your opinions do count with MAST. To those who have been critical of the MAST DOMs, let me say, "You win." Enough said.

This month's selection of special disks and programs includes:

PrintMaster Icon Disk #1 - Converted 8 bit icons. For a free swap I will add a number of Tiny formatted pictures of the PrintMaster Icons.

CP/M Utilities Disk #2 - For a free swap, you will get a couple more utilities, plus some documentation from last month that got misplaced.

Uniterm - Now with Ymodem and VT220 support. The documentation has been totally rewritten. Remember, with your original disk an update is only \$2.00.

Pictures!!! - From Steve Pauley's collection, Cartoons and Fantasy #1 and Space. If time permits, I might convert one of these disks to monochrome.

TVX Editor Disks - With a number of bugs fixed. This disk includes about three different editors, including a Unix VI lookalike. Also available is a disk of updated source code.

Publishing Partner Utility Disk - including new print drivers, fonts and a monochrome font editor.

GDOS Font Disk - For use with Degas Elite, Easy Draw and GDOS programs. In addition to a number of fonts, I will include a GDOS font editor so you can create your own fonts. Let me know if you make any fonts for future updates.

Color Globe Demo - A revolving globe that is very well animated. This demo takes 6 minutes to load and 1 meg to run. You'll like it.

Digi Music Demo - A digitized disco song called "Oxygen". You have to hear it to believe it. Requires a double-sided drive and 1 meg.

Spreadsheet - More about it at the meeting.

VIP Tax Templates - This month, Minnesota. I am also looking for a W-2 template. The Minnesota template was found by Bob Floyd. ???? - A mystery disk for the reason that I haven't tried it. If you program, this disk is for you.

Sweep - A hard drive utility program from MAST's Todd Burkey. He has spent a month laboring over this version of Sweep for the ST.

Clock - From MAST's John Stanley. He has made the corner clock program very functional in all resolutions. Nice job, John.

C Demo Program - Source code and program from Bill LeDuc's talk at the programmers' meeting. If you want to program in C and GEM, check this out.

Life - From MAST's Steve Pauley. In this version Steve has added load and save capability. In addition, Steve has made a number of interesting patterns.

More/less - File viewing program modified by MAST's Chuck Purcell. Of all of the more/less programs, this is the nicest so

far.

That's it for this month. Remember that there are now two places to get the MAST disks. In addition to the MAST meeting, you can also get the MAST disks at the MAST Programmers SIG meeting. Come early or come late if you want disks; we are quite flexible.

As of last month, we have 114 (count'em) disks of the month after one year. For information on any of the past disks, see me at the meeting or purchase the MAST documentation disk for \$2.00. This disk includes a description of each disk and a list of all files, organized using the DISKTOP program. This disk will be updated every three months at least.

I hope to see you all at the next MAST meeting and the Programmers SIG with the best new public domain software from the past month.

For those who don't know, MAST has a disk of the month for which we charge \$6.00, which is packed full of public domain software for the ST. I check all software programs and document them in a READ.ME file in each directory so you are sure you get something that works.

For those who cannot make the meeting and still would like the DOM, I will mail them to you within one week of the meeting for the standard \$6.00 plus \$0.50 for postage and handling for each disk. My address is:

3264 Welcome Avenue North
Crystal, MN 55422

Also, if I blow it and don't have disk that you want at the meeting, I will mail it to you free within one week of the MAST meeting.

Chuck's Notes
by Chuck Purcell

Well, Chuck has supplied me again with another round of articles for Chuck's Notes. This month, Chuck concludes his look at the PCOMMAND.PRGM, which is a command shell program which also access to GEM dialog boxes, alert boxes, and the file selector. This month, Chuck looks at the built-in commands for the PCOMMAND program. Check has been out of the country for the last month so I can't commit him to something, but next time we talk I'll see if I can arrange to have him demo this program at the next MAST meeting in March. I think you really have to see this program in action to enjoy it. Chuck will probably also bring along some of the stuff you get when you register for \$25.00. For those who would like a copy, this program can be found on the November utility disk #71. Now off to Chuck.
Jim

Solid Applications Inc. 1333 Moon Drive Yardley, PA 19067 HELP;
PCOM_GEN.APP Command Overview Copyright (c) 1986 PCOM_GEN.TXT

PCOMMAND is a shareware product from Solid Applications Inc. You may register your copy of PCOMMAND with Solid Applications for \$25.00. You will receive

documentation, the desk accessory version of PCommand and utilities including a format program which creates IBM PC format diskettes (one and two sided).

BUILT-IN COMMANDS: General syntax: optional items are placed within square brackets such as [XYZ]. Alternatives are separated by a vertical bar as with ON/OFF. Repeated items are followed by ellipses (...). No cases in keywords.

commands *discussion* *options*

? Help command, no parameters, Show built-in commands

ABORT [ON/OFF] Set/show ABORT flag, OFF indicates termination when BREAK=ON. BREAK=ON and a ^C or ESC key is pressed. ON prints the STACK status and allows system restart at the specified point.

BELL Sounds the bell.

BREAK [ON/OFF] PCommand recognizes ^C and ESC only if the BREAK=ON.

BYE [number|ON/OFF] Set the EXIT flag or exit from the current batch file = (EXIT[number|ON/OFF]) or input mode for 1 or more (number) levels.

CD (drive:|path)... Set/show current default directory of the specified drive. = (CHDIR (drive:|path)...) directory of the current or specified drive.

CHAIN file [parameter...](*.bat)Exit current batch file and continue execution of the new batch file using new parameters

CLS [option] Clear screen per 'option': LINE all of the current line

EOL from cursor to end of line EOS from cursor to end of screen

BOL from cursor to beg. of line BOS from cursor to beg. of screen

INSERT insert new line, delete bot. one DELETE delete current line, add to bot.

COPY source [...] [destination] [/D] copy files from to the 'destination' file, =CP source [...] disk, or folder. Copy only data files if /D is included

CTTY [CON:AUX|PRN:MID1] Change console to specified device.

DATE [date:|SHOW] Set/show date

DEL file [...] Delete one or more files ERA = DEL ; ERASE = DEL

D [directory ...] [/P] [/W] [/F] Display one + directories. /P prints all

DIR [directory ...] [/P] [/W] [/F] /W wide @ 4 names/line /F disk free sp.

ECHO [ON/OFF|@|option] ... [!|text] Set/show echo mode or print 'text'.

Option format is: '#' allows leading blanks.

row column Position cursor Cursor [ON/OFF] Turn cursor on or off

Foreground color: Set text foreground Background color: Set text background

(i.e. ECHO @10 10 @F 1 @BACK 0 @Cursor ON # Example)

FOR ZXV IN (file [...]) DO command Batch file command only.

Perform command while substituting variable ZXV, where 'v' is any char., while a 'file' is in the list. Names with wild card char. cause a directory search

GEM syntax: with examples of GEM usage:

GEM indicates state of GEM flag to be used by batches

GEM [ON/OFF|command|option] provides batch mode control of "command" execution

ON runs *.PRG files as from desktop Optionally force any program 'command' to run from the desktop mode. 'option' has the following forms:

[[[INDTE: SQUARE BRACKETS AND '!' ARE REQUIRED HERE(not optional markers).]]]

*GEM :ALERT default [type][text][button] 'default' specifies the default button (if no default set @ 0). The 'type' specifies the icon type (0 to 3, see GEM documentation). 'text' and 'button' items are separated by a '|'. Three 'button's max. The % ERRORLEVEL variable is set to the selection (1 to 3).

GEM :ALERT # [!][text][*] -> gem :alert 1 [!][line 1|line 2|line 3][OK|Cancel]

*GEM :FILE [path] [file] presents the GEM file selector menu. 'file' may be blank. Results are in %f for the file name and %p for the path name, and %d for drive letter; %e is 0 if OK is selected and 1 if Cancel is selected.

GEM :FILE [p] [f] -> gem :file b:\.prg

*GEM :SELECT default [text][button] General button selection which can have

more text and buttons than :ALERT but no icon option. 'text' can be as wide as the screen (less 2 characters).

GEM :SELECT # [text] [*] -> gem :select 0 [No default|button.][OK|Cancel]

default button sel -> gem :select 1 [The first button is the default][OK]

* button tag: [tag2]!.. -> gem :select 0 [This is a test | only menu.][!]

*GEM :INPUT [text][valid] General single line text input menu.

*GEM :INPUT [text][valid|format] 'text' contains lines of info. and

*GEM :INPUT [text][valid|format|default] appears at the top of the menu.

*GEM :INPUT [text][valid|format|default|output] The text entered is placed into %i. The 'valid', 'format', 'default' and 'output' options control what can be entered. The 'valid' string can contain any of these:

9 digits 0 to 9; A uppercase letters and space; a any letter and a space

N uppercase letters, digits and a space; n any letter, digits and a space

F file name characters plus : ? * ; | file name characters plus :

P path name characters plus : \ ? * ; | path name characters plus :

X any character; 'format' and 'output' specify where the actual text goes using '.' and all other characters are displayed as informative decoration.

Examples:

GEM :INPUT [An example:][XXXXXXXXXXXXX]

GEM :INPUT [Enter a date:][999999]/_/_/_]

GEM :INPUT [Enter a date:][999999]/_/_/_][12288]

GEM :INPUT [Enter a date:][999999]/_/_/_][!_/_/_]

GOTO label Continue batch file execution after the line with :label

GOTO #number label [...] Computed GOTO based upon the value of 'number' where the first label=0. Continue if there is no corresponding label.

HELP Print list of built-in commands. ?

IF [NOT] EXISTS file command Execute 'command' if condition met.

IF [NOT] FOLDER folder command Execute 'command' if condition met.

IF [NOT] ERRORLEVEL level command Execute 'command' if condition met.

IF [NOT] %i==%2 command Execute 'command' if condition met.

INPUT [#][prompt] Enter interactive mode if no parameters, otherwise, print the 'prompt' and accept one line from the keyboard. A leading '#' will not be printed and allows for leading spaces.

LOG [ON/OFF] Set/show LOG flag. PCommand prints exec. file name when ON.

MKDIR name [...] Create a new folder. MD name [...]

PATH [;|path] Set/show PATH list. Reset with ';'. The PATH is used to find find program/batch files. 'PATH path' is in the environment list.

Examples of PATH commands: syntax PATH [;|path]

path path ; path A:\system path a;|b;|c:\util

PAUSE Display 'Press any key to continue' and wait.

PRINT file [...] [/P] [/B] List 'file's on the printer. /P paginate w/ form feed at 55 lines/page. /B bin.print to end of file or to control-Z i.e. 26 decimal=1A hexadecimal.

PROMPT [prompt] Set/show PROMPT string which can include:

%_ New line (CR/LF) %B Vertical bar

%C Control character (control-x) %D Current date

%G '%' character %H Backspace character

%L '<' character %N Current default drive

%P Current default path on default drive %T Current time

%V TDS version number XX.YY %X '|' character

QED file Create new 'file' using simple line editor. EOF=1st null line

REN comment Remark in batch file.

RENAME REN old_name new_name Rename file. Works across directories

RMDIR RD folder [...] Delete empty folder.

RESERVE [size] Set/show reserve size. Normally for desk accessory version which can reserve memory for 2nd program ('size' in kilobytes; default 0)

SET (keyword=value) ... Show/set/reset environment list parameter. Environment list is accessed by applications ('keyword' and 'value' = any non-blank string)

SHIFT Batch file only. Shift parameter list by 'number' (default of 1)

STACK Display execution stack. Useful from within INPUT or batch files.

SWITCHAR [character] Show/set parameter character. Default is '/'

TIME [time:SHOW] Set/show current time.

TOS command [parameters ...] Force 'command' to execute in TOS mode (no mouse)

TYPE 'file' ... [/B] [/P] Display 'file's on screen; [/B ->EOF] , [more= /P]

VER Display TOS version number

VERIFY [ON/OFF] Set/show floppy disk verify flag

VOL [drive:),... Show volume name of 'drive'.

WRAP [ON/OFF] Set/show WRAP flag. Default is ON. Cursor will wrap if ON

Next month, Check looks at some of the public domain text editors with some quick reference cards to get you started. Until next month, many thanks to Chuck and happy hacking.

ST. PAUL ATARI COMPUTER ENTHUSIASTS
BRUCE HAUG, PRESIDENT
1697 E. HOYT AVE.
ST. PAUL, MN, 55106
(612) 774-6226